

DETAILED ACTION

1. This Office Action is in regard to the Application filed on 11/25/2003. Claims 1-23 are presented for examination.

Oath/Declaration

2. The Oath/Declaration filed on 4/14/2009 is accepted.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 2 recites the limitation "wherein said values of N and M are both the value of four..." in line 1. There is insufficient antecedent basis for this limitation in the claim.

In addition, it is not clear to what is meant by "said values of N and M are both the value of four..."

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-20 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Process' under 35 U.S.C. 101"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-6, 9-16 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Wood (U.S. Pat. No. 4,555,784).

As to claim 1, Wood (fig. 3) shows a method used in the generation of Reed Solomon parity bytes utilizing multiple operations some of which are comprised of the following steps: providing an operand representing N feedback terms where N is greater than one (col. 8, lines 3-23); computation of N by M Galios Field polynomial multiplications where M is greater than one (col. 5, lines 32-62); and; computation of (N-1) by M Galios Field additions producing M result bytes (col. 4, lines 59-66).

As to claims 2, 10-11, 13, 16, Wood (fig. 3) discloses a method, wherein said values of N and M are both the value of four resulting in computation of sixteen Galios Field polynomial multiplications (col. 9, lines 55 through col. 10 line 4).

As to claims 3-4, 14-15, Wood (figs. 5-6) discloses a method, wherein said computation of N by M Galios Field Polynomial multiplications occurs concurrently, and wherein said computation of N by M Galios Field Polynomial multiplications occurs sequentially in a pipeline.

As to claims 5-6, Woods discloses a method, wherein result bytes are used to modify Reed Solomon parity bytes in a separate operation, and in a same operation.

As to claims 9 and 12, Wood (fig. 3) shows a method used in the generation of Reed Solomon parity bytes utilizing multiple operations some of which are comprised of the following

steps: providing an operand representing N feedback terms where N is greater than one (col. 8, lines 3-23); providing an operand representing M incoming Reed Solomon parity bytes where M is greater than one; computation of N by M Galios Field polynomial multiplications (col. 5, lines 32-62); and; computation of N by M Galios Field additions producing M modified Reed Solomon parity bytes (col. 4, lines 59-66).

As to claim 20, method claim 20 corresponds to apparatus claim 1; therefore, it is analyzed as previously disclosed in claim 21 above.

As to claim 21, Wood (fig. 3) shows an apparatus used for the generation of Reed Solomon parity bytes implemented in digital logic performing an operation which is comprised of the following: means for providing an operand representing N feedback terms where N is greater than one; means for computation of N by M Galios Field polynomial multiplications where M is greater than one (col. 8, lines 3-23); and means for computation of $(N-1)$ by M Galios Field additions producing M result bytes (col. 4, lines 59-66).

As to claim 22, Wood (fig. 3) shows an apparatus used in the generation of Reed Solomon parity bytes implemented in digital logic performing an operation which is comprised of the following: means for providing an operand representing N feedback terms where N is greater than one; means for providing an operand representing M incoming Reed Solomon parity bytes where M is greater than one (col. 8, lines 3-23); means for computation of N by M Galios Field polynomial multiplications; and; means for computation of N by M Galios Field additions producing M modified Reed Solomon parity bytes (col. 5, lines 32-62).

As to claim 23, Wood (fig. 3) shows an apparatus used in the generation of Reed Solomon syndrome bytes implemented in digital logic performing an operation which is

comprised of the following: means for providing an operand representing N data terms where N is one or greater; means for providing an operand representing M incoming Reed Solomon syndrome bytes where M is greater than one (col. 8, lines 3-23); means for computation of N by M Galios Field polynomial multiplications; and; means for computation of N by M Galios Field additions producing M modified Reed Solomon syndrome bytes (col. 5, lines 32-62).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 7-8 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood in view of Okita (U.S. Pat. No. 6,550,035).

As to claims 7-8, 17-19, Wood does not explicitly disclose each said Galios Field polynomial multiplication utilizes a coefficient delivered from a memory device and wherein said memory device includes a register file (col. 10, lines 10-19).

Therefore, it would have been obvious to a person of ordinary skill in the art, at the time of the invention to improve upon the Reed-Solomon encoding device, as disclosed by Okita. Doing so would provide a Reed-Solomon decoding device that can reduce the scale and cost of the device (col. 4, lines 7-9).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse, whose telephone number is (571) 272-3813. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman, can be reached at (571) 272-3644.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3824

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fritz Alphonse/

Primary Examiner, Art Unit 2112